

Research Blogs as a Tool for Applied Biodiversity Sciences

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We are entering the age of what some consider Nature 2.0¹, a phenomenon emerging from thousands of individuals, conservation practitioners, environmental advocates, and invested aficionados alike, shaping the environmental and conservation information, data, and stories millions of web surfers receive. Nature 2.0 influences how Internet users filter and digest increasingly popular conservation news, reports, and factoids, whether through official venues

like the British Broadcasting Company's (BBC) [nature page](#) or quirky science memes exploding into full scale websites (e.g., [I F#!@&ing Love Science](#)).

We are similarly living in a geological epoch known to many as the Anthropocene, where ecological integrity is inextricably linked to human actions^{2,3} spawning an array of scientific endeavors addressing both the social and biological



dimensions of contemporary conservation (e.g., the [Applied Biodiversity Science](#) [ABS] Program at Texas A&M University [TAMU]⁴). For this reason, it seems logical that our awareness of humankind's connections to ecosystems and biodiversity would inevitably be filtered through one of humanity's most impressive technological inventions: the Internet. However, unlike the past 15 years of scholarly attention dedicated towards conceptualizing and understanding the Anthropocene^{2,3,5,6,7}, researchers are just beginning to connect our socially-fueled digital world to our perceptions of and actions in our natural environments^{8,9,10,11}. This is important because social media such as Twitter, Facebook, online conservation magazines, and independent research blogs (e.g., [Yale Environment 360](#); [Conservation Magazine](#); [ConservationBytes](#); [The Institute for Applied Ecology](#)) are revolutionizing how conservationists communicate with each other and with the broader public^{11,12}.

Research blogs in many ways define this growing trend, drawing the attention of applied biodiversity scientists from across the globe. For example, Twitter is becoming a uniquely valuable tool for sharing simplified and easily understood bites of cutting edge research. At the International Congress for Conservation Biology, the Society for Conservation Biology promoted Twitter use to circulate current research to non-attendees¹¹. Other conservation and development minded think tanks and research centers, including the Maryland based National Socio-Environmental Synthesis Center (SESYNC) and the Howard G. Buffett Foundation on Conflict and Development at TAMU, are using blogs and Twitter feeds to not only propagate current research, but to cultivate new opportunities via advertisements for funding and organizational workshops. However, some suggest this approach may not be fully supported in that "few practitioners would use a blog to access scientific information" (p. 4)¹³. Nevertheless, authors continue to cite blogs to inform peer-reviewed publications in highly reputable scientific outlets^{14,15}. Interestingly, blogs are further shown to contribute to scientific progress and subsequent public outreach, with "blog citations" of scientific articles enhancing the likelihood other scientists and practitioners will apply those studies towards future research¹².

And conservationists can personally benefit as well; blogging through Twitter or a larger media outlet provides scientists with an opportunity to fine-tune strategies for writing to a non-scientific audience – a much needed and often underdeveloped skill for modern day conservationists addressing controversial issues (e.g., climate change) within social-ecological systems^{16,17,18,19}.

The purpose of this paper, however, is not to narrowly emphasize the academic utility and intellectual merit of blogs. ABS is rooted in community participation, capacity building, and public outreach – all of which can be initiated and enhanced through blogging. The World Conservation Union–Conservation Measures Partnership (IUCN–CMP) categorizes blogs and other websites as tools to promote education and awareness²⁰ among practitioners and the public. This is because blogs and micro-blogs (e.g., Twitter) offer previously unavailable platforms for conceptualizing, formulating, and disseminating complex conservation issues for multiple sectors of society. A scientifically accurate blog can act as a catalyst for local action to address natural resource dilemmas by framing an issue in context-specific terms while filtering out misinformation from Internet sources of "dubious quality" (p. 517)¹⁷. In addition, this information presents a springboard for developing partnerships with local communities and governance structures, which can aid in avoiding miscommunications about situational details important to planning community-based conservation projects.

All of the above represent the positive aspects of blogs reporting 'finished' study results rather than science in action, documenting ABS as an unfolding experience. Think of an active research blog, where the reader can follow the researcher while she or he develops research plans, frames concepts, reports on quirky field experiences, and crafts results during the life of a research project. Fortunately, like many men with a graduate education (the demographic that makes up over two-thirds of science bloggers²¹), I started a research blog to chronicle my ABS research this past summer in Nicaragua²². My goal here is to share my experience writing a research blog while simultaneously exploring

strategies for effectively blogging about the applied biodiversity sciences during the course of fieldwork.

Brief Project Background

From May 22 to August 13, 2014, I collaborated with residents of El Carmen, Nicaragua to understand natural resource conflicts affecting this community and how these conflicts influence local knowledge about endangered seasonal tropical dry forests. The project occurred in 3 interconnected phases (interconnected means rather than being sequential, all 3 phases were ongoing over almost 3 months): 1) *identify current environmental conflicts through everyday conversations, interviews* (photo 3), and observations; 2) *document these conflicts through photography using residents' photos from disposable cameras and camera traps we placed to document wildlife associated with these issues*; and 3) *apply all of the information from residents and my observations toward analyzing the relationship between knowledge and conflicts, with an emphasis on developing potential solutions towards these prevalent issues*.

In total, 42 community members contributed to identifying and documenting seven environmental issues through 28 disposable cameras, 15 interviews, 7 camera traps, 1 focus group, 1 community meeting, and hours upon hours of jovial conversation. Identified conflicts included drought, jaguar (*Panthera onca*) attacks on livestock, agricultural burning, and crop pests (e.g., raccoons, [*Procyon lotor*] and coati-mundis, [*Nasua narica*] – all of which restrict or modify human well-being and interactions with the forest they depend on for their livelihoods. At the time of this writing, the project is now in the third and final phase. For this reason, as well as limited writing space, I cannot offer a deeper overview of what we found. But I can direct readers to the [blog](#) that is the focus of this paper for more details (*see below*).

**Texas A&M Center on Conflict and Development
Student Media Grants Program:
Natural Resource Conflicts and
Conservation Narratives in Nicaraguan Forests**

*Top: Interviewing a resident of El Carmen, Nicaragua. Middle: Removing toads while digging out a mud-caked well to stimulate water flow to mitigate the effects of unrelenting drought Bottom: carcass of a horse symbolizes the return of the once locally extirpated jaguar (*Panthera onca*).*



Blogging in Action

To start off, I did not formally measure the “success” of my blog at communicating the research process or having a scientific impact. Yet, many of my friends, family members, and university colleagues anecdotally expressed their interest in and surprise with the blog’s content, primarily how the posts were organized, writing style, context, and detail about a region and community unfamiliar to nearly all of the blog’s readers. However, before I launch into the meat of this blog, there are 4 essential precursors I adopted for preparing to write about the applied biodiversity sciences. In my case, these steps eased anxiety over writing to the public, constructing a concise and understandable message, and informing my own thoughts and ideas about the project. Simply put, they are: 1) *scheduling*, 2) *organizing*, 3) *communicating*, and 4) *adapting*.

Scheduling

Whether in the same state or a foreign country, ABS fieldwork is logistically and personally challenging. The decision to write a blog adds another layer of complexity to an already convoluted endeavor. This is why *scheduling* is so important. For example, after organizing my travel (including flights, hotels, and plans to cross into Nicaraguan from its southern neighbor, Costa Rica), I had to figure out where I was going to live, how I would reach my new home, how I would haul food to my home stay, when and how to start conducting interviews, placing camera traps, and handing out disposable cameras, and form a consistent field schedule. This process in no way required Internet access (and there wasn’t any where I lived). However, a blog did. Although blogging was not the only reason I needed to travel down (including supplies, checking emails, and a break), my blog became the main reason I needed to reacquaint myself with Nature 2.0. On that point, my advice is to commit to blogging on specific days. I regularly posted every weekend, both out of limitation and necessity. Knowing my blog was just over the horizon every time Saturday rolled around prepared me to keep the topic of my blog in mind as the public bus entered San Juan del Sur, where I would stay every weekend and



*Top: some residents consider agricultural burning a commonly practiced and effective method to remove pests, while others see it as destructive. Middle: raccoon (*Procyon lotor*), known as a mapuchin by locals, photographed on one participant’s farm Bottom: A group of pisotes (coati-mundis, *Nasua narica*) selectively targeted by a participant’s camera trap to illustrate a common pest for farmers.*



watch the parrots as I wrote.

Organizing

After committing to a timely writing schedule, I needed to *organize* my thoughts. Organization was key, both for structuring the flow of each individual post and constructing a clear narrative theme across the entire blog series. I elected to use the blog as a way to tell my audience (and myself) my purpose and goals (i.e., [this blog post](#)) while secondarily laying out “A look at what to expect for this summer” (i.e., [this blog post](#)). The second post outlined the subsequent format for the rest of the blog: each post would be dedicated to one natural resource conflict, with an eventual brief exploration of my results later in the summer. Human-jaguar conflicts ([found here](#)), the environmental and socio-economic effects of teak (*Tectona grandis*) plantations ([found here](#)) and snakes in the woods ([found here](#)) are some examples of my post.

Organization also involves choosing a general framework for each individual post. Here is why organization and communication (*see below*) come into play. The structure of each post was intentionally formulaic. First, I began each post with a personal story as a way to ease the reader into more detailed information, catch her or his attention, and offer inspiration for the remainder of the post. With this approach, I did not have to worry about having every scientific facts straight to start writing because I already knew the story I wanted to tell, helping avoid writers block on a continual basis. Second, the body of the text dove into the blog topic headfirst, presenting social, economic, financial, environmental, and psychological aspects in whatever order fit the posts’ themes – basically most aspects of a social-ecological system that were available to me at the time. And third, I closed each post with a thought, question, or consideration relating the previously described conflict to local knowledge and the project as a whole. By doing this, I refreshed the study objectives in my mind and with

the audience, keeping everyone on track for the next post.

Communicating

A search for “Science public communication” in Google yielded 162 million hits. The word “public” is particularly relevant in this case. ABS and social-ecological systems research is filled with scientific terms that many would deduce to discipline-specific jargon. Although these terms are useful for communicating specific ideas, they can muddle an already nebulous subject. I chose to focus on communicating with the public for my blog instead of writing directly to other researchers. My decision was guided by concerns over organization (*see above*) and comprehension. Organizationally, starting each blog post off with anecdote-filled accounts of my time in El Carmen set the tone for a casual blog post. Also, following a systematic format for each post set expectations and provided clarity across the summer’s worth of posts. In terms of comprehension, the relaxed but informative style broke down complex issues into more concrete descriptions. As the writer, you are the expert. But that does not mean you still might lack some understanding.

Writing for the public allows the writer to test her or his understanding of the material. If your blog is succinctly written and concisely organized, it will be understood. In line with that point, the goal of my blog was not to make everyone experts; rather, the point is to use these platforms as vehicles for education and awareness. This is why I recommend adopting a casual writing style for these types of blogs. Rather than overload readers with a mountain of dry and incomprehensible numbers and statistics, for example, sprinkle a dash here and there to support larger points. As stated before, limit use of scientific jargon to concepts that are absolutely necessary. And imbed links to references as words in the text in place of typing out the full citation.

Adapting

My last point of advice is to be flexible with your scheduling, communicating, and organizing.

Navigating fieldwork logistics can be extremely difficult. Events that are out of your control will alter your blogging schedule. The Internet might time out at your favorite café. A thunderstorm could trap your bus for a few hours. The local army barracks might suspect you for drug trafficking, detaining you for a few hours, and draining your desire to write afterwards. Stuff happens and it may be more likely to happen when doing ABS research.

I would not be surprised if a blogging schedule gets derailed because of because of unforeseen circumstances. In that case, it may be worth your energy and peace of mind to skip your blog on that day. The previous example with the local army actually happened to me. My plan was to blog on Saturday,



Top: Teak plantations, called *teclares*. Bottom: Three community members found this boa in their home, managing wildlife “conflict from below”




until my ‘visit’ with the army sidetracked my trip into town by 3 hours. I blogged on Sunday that weekend.


I also adjusted the sequence of my blogs. Placing special attention on each individual conflict aided in clarifying my thoughts and breaking down how knowledge may interact with and emerge from natural resource conflicts. This topic eventually became the subject of another blog post: “**Where does knowledge fit in the picture?**” However, I would not have written that post if I stayed wedded to the write-one-conflict-per-post strategy. Adapting to my growing perspective allowed me to be flexible, thereby keeping readers and myself informed about my thought process.

Some Final Thoughts

For now, the Anthropocene is here to stay – a fact likely considered in the conception of the ABS program at TAMU. In the original proposal for the ABS program, “A reviewer...pointed out that ‘biodiversity and conservation efforts... successful elsewhere in the world (e.g., Africa) have benefited from this type of approach [actionable and integrated science], more through trial and error than purposeful training’.” To which the architects of the ABS program responded, “This ABS-IGERT is purposeful in this regard; it will prepare researchers of different disciplines to understand and coordinate with each other, linking interdisciplinary teams with institutions and actors in conservation”(p. 5)²³.

Although this quote is in the context of collaborative research, it can equally apply to public outreach and communication. Blogs, at least in my case and that of others (e.g., **Central American ABS Blog**), serve as mediums for purposefully exploring and disseminating ABS research in real time. As the influence of Nature 2.0 expands into our conceptions of and relationships with the natural world, blogs will continue to grow in importance both as sources of novel conservation achievements, resources for advancing ABS, and educational tools for an eager public. This article is one step towards establishing blogs as a significant cog in the ABS toolkit. 

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